

Major Cause for Concern

The most serious problem facing the rapid development of satellite communications and satellite and cable TV in AsiaPacific at present involves the bitter battles being fought for orbital slots. Until the ITU has the authority to impose its decisions the problem is likely to grow worse. The latest unsettling developments are covered in this issue in our News section and Special Supplement on Satellite Communications. Our December issue will include a Special Supplement on Satellite and Cable TV.

ASIAPACIFIC SPACE REPORT

Volume Three, Number Ten

REACHING FOR THE FUTURE

OCTOBER 1993

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Thai Tribulations



The authorities in Thailand are facing a spate of challenges to the country's weak satellite legislation only two months before the scheduled launch by an Ariane rocket from Kourou in French Guiana of Thaicom 1, the nation's first satellite. At the centre of the storm is the Shinawatra group, which will operate the Thaicom 1 satellite and a second spacecraft, Thaicom 2, that is due to be launched next year.

Shinawatra has a 30 year concession, including an eight year monopoly, from the government to operate the satellites and only the Thaicom satellites may be used to deliver satellite services in Thailand during

the monopoly period. However, the company is now apparently angling for a longer monopoly period. It has not said for how long, but there is speculation that it wants 15-20 years.

Dr. Thaksin Shinawatra, who heads the group, said at a recent press conference that the existing arrangement would make it impossible to recoup the Baht 8 billion (US\$200 million) that was being invested in creating the satellite system in the time allowed. "This makes the project uncompetitive with satellites in other countries," he said.

There is also some reluctance among

companies already operating satellite services in Thailand to transfer them from other spacecraft to the Thaicom satellites.

The original concession also included a stipulation that prevents Shinawatra from entering the satellite broadcasting business, and this remains in place. Shinawatra makes no bones about the fact that it is extremely unhappy about this situation and is willing to take extreme measures to circumvent it.

The company has said that if it is prevented from uplinking programming in Thailand, it is prepared to set up a broadcasting centre in neighbouring Cambodia. From there it would transmit programmes via a Thaicom satellite that could be received in Thailand and elsewhere.

Shinawatra controls the International Broadcasting Corp. (IBC), which runs a cable television network in Bangkok. IBC has said in the past that it is exploring the possibility of creating satellite TV services for Thailand and on a regional basis using the Thaicom satellites.

In an attempt to test the legality of this situation, a close business ally of Shinawatra, Samart Satcoms, is planning to distribute the Home Box Office (HBO) service in Thailand on a direct-to-home basis. HBO Asia uplinks the service from Singapore to the Palapa B2P satellite, and HBO is already part of IBC's basic five channel package.

Samart, which is 20 percent owned by Shinawatra, already has an entertainment channel that is distributed to hotels and apartment blocks. Samart has no satellite broadcasting licence, and under Thai law may not need one, as the HBO service is

uplinked from Singapore.

A second cable operator, Thai Sky, is known to be keenly interested in the outcome of the conflict, which may affect its own plans.

The Mass Communications Organisation of Thailand (MCOT), which regulates broadcasting and relies upon royalty payments from private operators for most of its revenue, is taking legal advice on whether the laws are being breached.

"IBC and Thai Sky have spent more than Baht 1 billion (US\$40 million) in business. We couldn't let any broadcaster enter to reap profits without obtaining a broadcasting licence from the government," said MCOT director Sangchai Sunthornvut. "For us as a licenser, we have to protect our licensees."

Imprecise Laws

Satellite services are covered by communications statutes regulating the electronic media. They make little allowance for advances in technology or anything relating to satellite TV programmes.

The absence of specific legislation first became an issue two years ago. It was then that Star TV, which has pioneered the satellite TV market, began broadcasting its five free-to-air channels throughout Asia, uplinking them from Hong Kong.

This meant that the programmes could be received in Thailand without Star paying royalties which are imposed by the government on the operators of cable TV systems. Shinawatra has argued that offshore satellite TV operators, even though they might

not come under Thai jurisdiction, should be subject to the same regulations and revenue-sharing rules as other operators.

"There are numerous interpretations of the guidelines and the Samart case will force someone to make a decision," said one analyst. "My guess is they may have to open up satellite pay-TV to all-comers."

While Shinawatra waits for its position as a satellite broadcaster to be clarified, others are stealing a march on the company that pioneered the cable industry in Thailand. Thai Sky added BBC World Service News and MTV music videos to its cable service in September, ending IBC's hopes of signing two of the biggest draws on Star's free-to-air service.

A government agency has also proposed introducing educational courses to be broadcast by satellite and cable TV, only weeks after Shinawatra mooted the same idea for remote rural areas.

Meanwhile, a jewellery firm expanding into data communications is threatening Shinawatra's monopoly on telephone delivery systems in Bangkok. The firm, Oriental Lapidary, has sought a licence for an Italian communications system that Shinawatra claims will compromise its 10-year exclusive right to distribute data in the capital.

Four other companies — Samart Satcoms, Compunet, Acumen and Thai Skycom — are allowed to operate similar systems, but only by satellite. Shinawatra was recently refused permission to extend its service to provincial areas already served by these four operators. —

Alan Boyd in Bangkok

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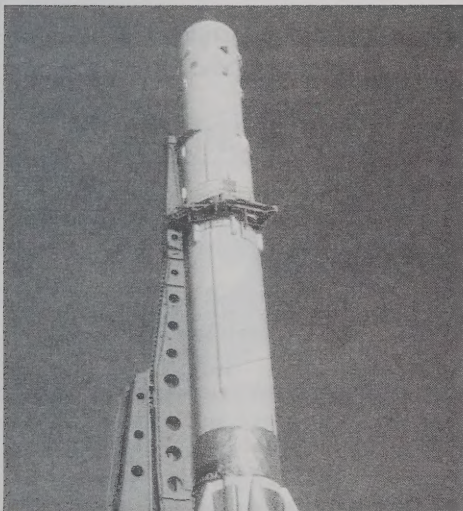
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SPACEPORTS

Russia Joins the Game



The plan to establish a private-enterprise spaceport in Papua New Guinea (PNG) has taken another step forward. Space Transportation Systems (STS) of Australia has announced that it has teamed up with the Russians to develop a spaceport that will launch satellites on a commercial basis using Proton rockets.

Like previous efforts to develop a spaceport in Australia, the project lacks finance. The cost of developing a launch site is put at US\$850 million, and STS says that it is hoping to raise most of the money in Asia, though it is also looking elsewhere. STS' previous efforts to raise finance for a similar spaceport on the Cape York Peninsula in Australia came to nothing.

Under the agreement, STS says it has an agreement with all the Russian enterprises involved with the Proton, and a fourth stage known as the DM booster, that gives it the rights to be the sole operator for 20 years of Proton launches outside of Russia.

To cement the agreement, STS says it has already provided the Russian companies involved in the deal with finance that will allow them to work on the design of the spaceport and work out any adjustments that will be required to the Proton system to allow it to operate in a tropical climate. The company says this initial finance has been raised outside Australia, but declines to name the amount.

The final choice of where to construct a spaceport has yet to be made, but it lies between Manus island and Emirau island in the north of Papua New Guinea. Both islands are close to the equator, from where

Protons should be able to put payloads of 4 tonnes into geostationary orbit compared with the 2.5 tonnes that is possible from the Baikonur Cosmodrome in Kazakhstan in Central Asia.

Under the deal, the Russians will develop the necessary design for the launch site and its technical complexes and the Proton launcher that will be used at the spaceport; supply on a commercial basis the three stage Proton launchers and the DM Booster that will send payloads into geostationary orbit; and provide technical assistance during the development and operation of the spaceport, including training for Australian personnel.

STS will be responsible for management of the spaceport's development and construction, its operations and for marketing of the launches. The two sides have agreed that the project will abide by the Missile Technology Control Regime, designed to curb the spread of missile technology to developing nations.

The Russian organisations involved in the deal are named as State Scientific Production Space Centre, named after M. V. Krunichev, chief developer and manufacturer of the Proton; the Energia Research and Production Association, owner and operator of the DM Space Booster; and the Design Bureau of General Machine Building, developer of the Proton launching and technical complexes.

The project is receiving enthusiastic backing from the government of Papua New Guinea.

EUROPE

CNE Plans Expansion

The Hong Kong-backed Chinese News and Entertainment (CNE) channel that broadcasts to Europe via satellite for three hours daily, is planning to expand the service to 10 hours a day next year. The channel, which broadcasts from London, plans to invest US\$15.3 million on the expansion.

The channel was the first in Europe to broadcast news, business information and entertainment in Chinese and was launched last November after receiving a 10-year non-domestic satellite TV licence from the British authorities. The initial investment was for the same amount as is planned for the expansion.

At present, the service is broadcast

between 1am and 4am and reaches 26 countries in Europe. The programmes originate in Hong Kong, Taiwan and China.

"The market response has been very encouraging," says CNE general manager Betty Yao. "We have received thousands of letters from our viewers, so we have decided to increase our operation."

So far, though, the channel has only attracted a limited amount of advertising. As a result, the expanded service will not be broadcast free to air, but will be developed as a subscription service.

The company is planning to charge a monthly subscription of between US\$23 and US\$30 per month. The company is backed by Hong Kong tycoon Tsui Tsing-tong, who holds 75 percent of the shares.

COMPANIES

New HBO Customers



Home Box Office Asia is making steady progress in marketing its movie and entertainment channel, that is delivered via Indonesia's Palapa B2P satellite, in the region. It has expanded distribution in the Philippines and Thailand, has signed a deal for distribution in Taiwan, and is understood to be available in Brunei.

The expansion of operations in the Philippines takes HBO beyond the three small cable systems in metropolitan Manila that were the original carriers of the service.

According to HBO Asia's managing director, Bill Hooks, the channel is now carried on two dozen systems across the country and expects to be connected to 40 small systems by the end of this year. "On all of them we are being distributed as a basic service," he said. "We will have 75,000

Filipino households by the end of the year."

Six months ago it was estimated that there were only 100,000 cable subscribers in the Philippines, so the progress has been substantial, he added.

In Thailand, since becoming a part of the five channel IBC Bangkok basic cable service, rather than a separate pay service, HBO Asia is now seen by 70,000 subscribers. The service is also being distributed to viewers in smaller northern cities.

In Taiwan, HBO has signed a distribution deal with Era International, a Taipei-based video distributor. Initially, the channel will be in English, though Chinese-language subtitles are to be introduced later.

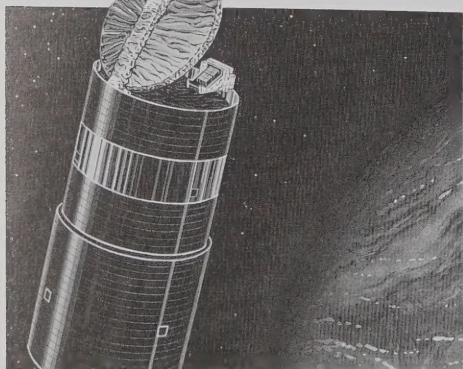
With more than 6.5 million television households, Taiwan currently boasts 1.2 million cable homes paying an average subscription of US\$25 per month for up to 40 channels. "We expect to achieve a penetration of between 20 and 40 percent over the next five to seven years," said Steven Rosenberg, senior vice-president at HBO International.

HBO is also understood to be available in Brunei. The service is apparently being distributed on a private basis by the family of the Sultan of Brunei. Hooks would give no information on the Brunei arrangements, except to say that "it's a fair deal for HBO."

HBO also distributes in Singapore. —
Simon Twiston Davies

SATELLITES

9 Bookings for Apstar 1



A group of five leading international television programming companies that will compete with Star TV, has signed firm agreements to lease nine transponders on Apstar 1, the first satellite of the APT Satellite Co. of Hong Kong. The satellite, with 24 C-band transponders, is due to be launched mid-1994 on a Chinese Long March 3 rocket provided it is not effected by

US-imposed technology transfer sanctions against China.

The lease agreements were signed by TVB International of Hong Kong, that recently started broadcasting a Mandarin-language channel (4 transponders); Turner Broadcasting Systems, parent company of CNN (2); ESPN Asia, operators of the US-based sports programming network (1); HBO Pacific Partners, that broadcasts a movie and entertainment channel (1); and Discovery Communications, a US-based media company that will broadcast The Discovery Channel of documentaries and education (1).

According to APT, Apstar 1 is now fully booked, though exactly who the other clients are had not been revealed at press time. However, they are believed to be a combination of Chinese companies and possibly other broadcasters. Asia Business News, Channel 9 of Australia, Viacom of the US and Carlton Communications of Britain are reputedly waitlisted for the satellite.

APT announced at the signing ceremony that it has already received reservation requests for its second satellite, expected to be called Apstar 2. The company said it was finalizing its plans for the satellite that is expected to have 34 transponders, including 8 with Ku-band capacity. Apstar 1 was provided by Hughes of the US, though other companies are now understood to be competing for the second satellite.

The five broadcasters which reserved transponders on Apstar 1 are also holding discussions on coordinating signal encryption, programme transmission, distribution and marketing efforts. They also say they would welcome broader participation in the group by other television programme producers and networks.

Originally, the group said it and other broadcasters were planning to book 16 transponders on the satellite. No explanation of the reduced number of transponders was offered.

The use of digital compression could allow others to make use of the Apstar 1 transponders booked by the group, especially those of TVBI. At present, TVBI has one channel operating via the Palapa B2P satellite, but says it is in the process of developing others.

It is not yet clear exactly what these channels will be, though the company says it is talking to a variety of programme providers from the West. The two transponders booked by Turner will carry CNNI and other Turner programming on an additional channel expected to be launched next year. (For related stories please turn to Satellite Communications and Satellite and Cable TV sections).

PAPUA NEW GUINEA

New Dispute Over Slots



Papua New Guinea, which is still striving to make its Pacstar system of two satellites a reality, is at loggerheads with PanAmSat, the US entrepreneurial company that is creating a private enterprise global satellite system. It is accusing PanAmSat of planning to place its PAS-2 Pacific satellite less than 2 degrees away from the 167.45 E degrees orbital slot Papua New Guinea plans to use for its Pacstar 1 satellite.

In a statement, John Kamblijambli, the Papua New Guinean director of the Pacstar project said that it was still planning to occupy the slot with a satellite by mid-1994. If the two satellites are less than 2.5 degrees apart their transmission signals will interfere with each other.

Kamblijambli said that under ITU regulations, Papua New Guinea has priority over PanAmSat to the position "and we intend to exercise those rights fully." He accused the US company of "trying to bully the PNG into buying its service, which is not as good as our own Pacstar transponder service. We will not allow PanAmSat to exploit us."

PanAmSat has given the orbital position of PAS-2 as 168 degrees East, but according to PNG it is planning to use a new position that it still less than two degrees from Pacstar 1. Pacstar and PanAmSat have held joint venture negotiations, according to the statement. PNG and PanAmSat have also been making representations to the US Federal Communications Commission (FCC) over the slots' issue.

The Pacstar project is being developed by Pacific Satellite Inc. (PSI) which is major-

ity owned by PNG's Post and Telecommunications Corp. The remaining shares are held by US interests. PSI says it is holding joint venture discussions with several companies to make Pacstar a reality.

PanAmSat is campaigning for a change in ITU regulations that would prevent access to orbital slots going to countries or companies that are unable to make use of them and forbid trafficking in slots (see also Satellite Communications section).

LAUNCHERS

A Rocket Returns

A third-size launcher designed to demonstrate that a fully reusable rocket can become a reality has completed its first formal test flight. The single stage vertical take off and landing vehicle completed a suborbital flight that lasted for 66 seconds.

The Delta Clipper Experimental (DC-X), developed by McDonnell Douglas of the US took off and hovered in a vertical position at 300 feet. The launcher then moved laterally in a straight line 350 feet before descending vertically and touching down on the launch pad.

The test represented a major step forward in the flight test programme. Prior to the test at the White Sands Missile Range in the US, the DC-X successfully completed an initial hover test to demonstrate its guidance, navigation and control systems.

The DC-X, which was developed and built in only 18 months under a US military programme, is scheduled to undergo several more suborbital flights. The purpose of the programme is to demonstrate that reusable launchers can be developed, maintained and relaunched with the routine regularity of today's aircraft.

"Our intent is to begin aggressively expanding the flight envelope to learn as much as possible as quickly as possible," said a spokesman for the Ballistic Missile Defense Organisation (BMDO), the government agency that is funding the project. "As with any experimental vehicle on the leading edge of technology, the risk of losing the DC-X vehicle will grow substantially as we push the limits of the flight envelope."

If the flight tests are completed as planned, it will provide major encouragement for the US government to fund development of a launcher that can take off vertically, fly into orbit, reenter the atmos-

phere nose first, rotate to point its engines at the ground and land vertically.

Such a launcher should be a major advance on today's "throw-away" rockets that can be used once only. The hope is that reusable rockets will reduce radically the cost of putting payloads into orbit and make access to space routine. This, in turn, should spur commercial space developments.

JAPAN

Navigation from Space

Japan is to invest US\$1 billion to develop two satellites and ground stations that will boost the move towards the creation of a global system of satellite navigation and communications for airlines and aviation users. The scheme is being developed by the Ministry of Transport which says it expects budgetary approval to be forthcoming from the finance ministry and from parliament.

The plan calls for Japan to build two relay satellites and two ground stations. The first of the satellites would be launched in 1999 and the second would follow in 2004. The satellites will provide communications and positioning information for aircraft flying in a region stretching from Australia in the south to Alaska and Russia in the north and taking in China and much of Asia, including Southeast Asia.

The system will supplement those already being operated by the US and Russia with former members of the Soviet Union. The Japanese satellites will be designed to operate for 10 years, with one acting as a backup to the other in case of failure.

Japan says that other satellites will be launched later. The ground stations controlling the satellites and responsible for relaying communications and receiving positioning data will be built in Japan over the next six years. The data will be sent to the relevant air traffic controllers.

The Japanese initiative fits in with the plans of the International Civil Aviation Organisation to make satellites the cornerstone of its air navigation system strategy from the year 2000. The organisation is part of the United Nations.

The Japanese system will supplement the US Airforce's Global Positioning System that at present consists of 24 satellites, and the Russian Global Orbiting Satellite System that is expected to have 21 satellites deployed by 1995.

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Rupert Murdoch

'New technology has been a key factor in the spread of freedom'

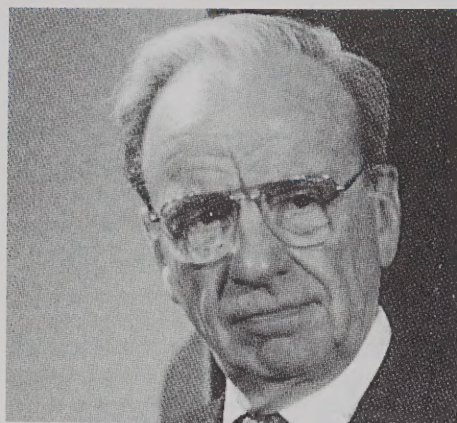
We are on the edge of a new technological revolution. It is confusing, frightening and breathtakingly exciting.

For years man has been both beguiled and frightened by major new technologies. And with reason. The motorcar brought with it an enormous increase in personal mobility, and a parallel increase in congestion and pollution. Nuclear power gave us a virtually limitless supply of energy, and the means to blow ourselves up. And television created both a new means of entertaining and informing huge numbers of people, and the possibilities of totalitarian control by Big Brother laid out by George Orwell in his frightening 1984.

Well, we are almost a decade beyond Orwell's fateful date, and he has been proved wrong. Advances in the technology of telecommunications have proved an unambiguous threat to totalitarian regimes everywhere. Fax machines enable dissidents to by-pass state-controlled print media; direct dial telephony makes it difficult for a state to control interpersonal voice communications. And satellite broadcasting makes it possible for information-hungry residents of many closed societies to by-pass state-controlled television channels.

In short, the march of telecommunications technology has been a key factor in the enormous spread of freedom that is the major distinguishing characteristic of recent years. The Bosnian Serbs can't hide their atrocities from the probing eyes of BBC, CNN and Sky News cameras; starvation in Africa can no longer be ignored, because television brings it into our living rooms; the extraordinary living standards produced by free-enterprise capitalism cannot be kept secret from the world.

Technology is racing ahead so rapidly, news and entertainment sources are proliferating at such a rate, that the media mogul has been replaced by a bevy of harassed and sometimes confused media execu-



tives, trying to guess at what the public wants. The consumer is in the saddle, driving the telecommunications industry. The technology is galloping over the old regulatory machinery, and in many countries rendering it almost obsolete.

An expansion of choice is one characteristic of the new telecommunications era. The others are equally extraordinary — convergence and interactivity.

Convergence is a process which is seeing some of the world's largest industries trying to come to terms with a new age in which few of the old rules seem to apply. The traditional distinctions are breaking down. Five of the world's biggest industries — computing, communications, consumer electronics, publishing and entertainment — are converging into one large dynamic whole.

'Five of the world's biggest industries are converging'

Just how far this process will go we do not know: it is important to distinguish between technological possibilities, commercial feasibility and public demand.

News Corporation is working with British Telecom and Cellnet to explore these critical issues to develop what President Clinton has called the digital super highway of the future. This involves combining satellite technology with telephone networks, allowing consumers to access communications, TV shows, movies, sporting events and information services as simply as possible.

The new super highways of communications will lead where consumers decide they want the technology to take them, not where laboratory scientists want them to go. Our lives can be enriched by the new choices

providing new forms of communication while enlivening the old.

The recent acquisition by News Corporation of a majority interest in Star TV, based in Hong Kong, has changed the landscape for this company's broadcasting strategy. Put simply, it represents the most exciting challenge in broadcasting in the world, with a reach of more than two-thirds of the entire planet. But if it has enormous potential, I recognise that it also carries with it enormous responsibilities.

We will introduce a wide range of new programming, including an open university and educational channels. Our ambitions include the creation of new channels, with a worldwide reach — including an arts channel, and other channels of original material. With our partners, we will aim to create and cover global events.

I must emphasise that this new technological era does not offer opportunities for News Corporation alone; it is an environment in which all media companies can and should participate.

On October, Sky News, already seen in 33 European countries, started being satellited to Southern Africa. Plans are well advanced to take Sky News, or a parallel service, to all the continents of the world, where we will be seeking local partners, both national and regional.

Looking further ahead, to digital compression, we have been for some time developing the means with which people will access the almost infinite wealth of programming and services digital compression will bring the consumer. We have signed an agreement with some of the best brains in the business to develop, co-operatively, what will be the common digital satellite system throughout Europe, Asia and the Americas.

The group consists of the British research and telecommunication organisation NTL, an American high-technology company, Comstream, and our own access control and encryption company, News Datacom.

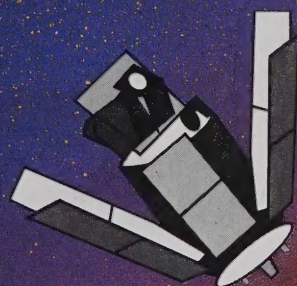
We have also bought Delphi Internet Service Inc., one of the five big recognised on-line data services in the United States. This service will provide endless data and information — even electronic newspapers — to every individual everywhere in the world who has the necessary equipment to receive it.

Rupert Murdoch is chairman of News Corporation. His views are extracted from a recent speech he made in London.

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Orbital Slot Confrontations Become Bloody

An Ill Wind

The great age of satellite communications is in the process of being born in AsiaPacific. At present, there is only one serious factor hampering the process, and that is the war in orbit over whose satellites should occupy which geostationary slots providing coverage of the region.

All the signs are that the skirmishes already being fought will become increasingly bitter until the ITU rules of the road are clearly defined and a mechanism is created to enforce them on an international basis. Meanwhile, knives are being drawn in earnest as satellite companies and organisations fight over the choicest slots that are still available.

At the heart of the fray are Tongasat, the satellite company of the Pacific islands' nation of Tonga, and two US-based entrepreneurial satellite companies, Columbia Communications and PanAmSat. At issue are six orbital slots registered in Tonga's name by the International Telecommunications Union (ITU). The ITU, through its Radio Regulations Board (RRB), acts as a global watchdog and maintains a slot register.

Tongasat is leasing orbital positions to two other US satellite companies, Rimsat and Unicom, but has neither the capital nor the intention of launching its own satellites. Columbia and PanAmSat have petitioned the US government Federal Communications Commission (FCC) to adopt a policy opposing Tonga's claims to the slots.

The two companies want the FCC to oppose trafficking in orbital slots, which they say is an abuse of ITU regulations, and to deny "landing rights" in the US to satellites operating in Tonga's orbital positions. Once the FCC has

adopted an appropriate policy against trafficking, the companies say, it should press other ITU members to adopt them as part of ITU regulations.

"This great charade has been

going on for too long," said Fred Landman, president of PanAmSat. "This is a situation where companies are laying claim to orbital slots as if they were pieces of prime real-estate and then selling them to the highest bidder. The intended use of outer space for the benefit of mankind is being co-opted by a group of profit-seeking companies."

Tongasat's position has always been that it acquired access to the slots in adherence with ITU regulations. Mats C. Nilson, the managing director of Tongasat and the person who orchestrated Tonga's move into the slot market, has also pointed out that other Asian countries — Singapore, Thailand, Indonesia and Malaysia — have also registered claims for more slots than would be required to serve their respective populations.

Meanwhile, Rimsat has moved a Gorizont satellite into one of Tonga's positions at 134 degrees East, and parked it next door to a the Indonesian Palapa B1 satellite owned by Pasifik Satelit Nusantara, that was already occupying the same slot. It is generally recognised that Tonga has priority to the slot,

At press time there was no indication that the Palapa satellite had either been shut down or moved as Tongasat is requesting. Both satellites were reported to be operating.

The APT Satellite Co. of Hong Kong is also believed to be after the 134 degrees slot for its planned second satellite, Apstar 2. The same company also wants to place its first satellite, Apstar 1, due for launch next year at 131 degrees East. This is too close for comfort for Rimsat, that intends to position its second Gorizont in a Tongan slot 130 degrees East.

Another serious confrontation over orbital slots that had also not been resolved at press time was that between Asia Satellite Telecommunications (AsiaSat) of Hongkong and the Shinawatra group of Thailand.

Shinawatra's first satellite, Thaicom 1, is to be launched in December and is destined for an orbital slot at 101 degrees East. AsiaSat wants to place its second satellite, AsiaSat 2, that is due to be launched in late 1994 or early 1995, at 100.5 degrees East.

The global satellite cooperative Intelsat, is also understood to be embroiled in a confrontation with Malaysia over slots at 91.5 and 95 degrees East and Papua New Guinea and PanAmSat are also involved in a heated dispute over slots (see news section).



*“Companies
are laying
claims to slots
like real-estate ,*



Power in the Pacific

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PAS-2 is specifically designed for television programmers and corporate communications users. Break-through service innovations (fully linearized transponders and on-board cross-strapping), mean PAS-2 will out perform all other satellites in the Asia-Pacific region.

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China Seeks to Boost Space Technology Exports

Commercial Ambitions

China, which is already making steady inroads into the world market for launching commercial satellites, wants to expand its exports into other areas of space technology. Its space activities have recently been restructured under a new organisation, and it is now looking for joint ventures with overseas companies able to assist it in improving the quality of its products to acceptable world standards.

As a step in this direction, the Chinese Academy of Space Technology (CAST) has signed a joint venture agreement with Australian telecom carrier Telstra to develop technologies for satellite systems. The agreement was signed in Beijing by Prof. Wei Dessen, vice president of CAST, and Peter Shore, Telstra's managing director.

Under the agreement the two organisations will seek to develop satellite system technologies and to market them within China and the AsiaPacific region. To begin with, the joint venture will concentrate on satellite Earth station terminals, but later is expected to expand into more broadly based activities.

CAST and Telstra have applied to the Ministry of Foreign Trade and Economic Cooperation in Beijing for the necessary joint venture licence that will allow them to start operating. Telstra already has an international reputation for the design, construction and operation of satellite Earth stations.

CAST is China's main research centre for space technology. It designs and manufactures communications, remote sensing and recoverable spacecraft as well as ground control equipment through its complex of 14 research institutes and factories.

A spokesman for the recently formed China National Space Administration (CNSA) said that China

hopes to be in a position to start exporting satellites before the year 2000. CNSA is China's equivalent of NASA, and responsible for space cooperation with governments. There is also a commercial arm, the

China Aerospace Corporation (CAC).

Prior to the major reorganisation, China's space activities came under the Ministry of Aerospace Industry. Although CNSA and CAS will continue to receive revenue from government space contracts, the new organisation has also been given the task of producing revenue from commercial contracts.

CAST, the division of the China Great Wall Industry Corp. that sells launch services and other Chinese organisations involved in space development activities are now grouped under CNSA and CAC. The organisation will produce both military and civilian space products, and oversee all government and business space activities, according to recent reports.

The recent space technology export sanctions imposed by the US on China will hamper commercial activities in the short term (see this section). But in the longer term, if China continues with its open-door policy and political turmoil does not tear the country apart, there is little doubt that its space technology will find a place in the increasingly interconnected global marketplace.

New Intelsat Member

The Federated States of Micronesia, a Pacific island nation, has joined the Intelsat global satellite cooperative as its 128th member. The agreement with Intelsat was signed by Takuro Akinaga, general manager of the Micronesia Telecommunications Corp.

Under the agreement, Micronesia has an initial investment share in Intelsat of 0.05 percent and has designated Telecom Corp. as the signatory. Intelsat operates a global system of 19 satellites that provide transoceanic, regional and domestic telephone and television services. The cooperative's revenues in 1992 were US\$622 million.

‘China wants to export its satellites’





New Satellites Will Serve AsiaPacific

Intelsat Order

The global satellite cooperative Intelsat is to order three new spacecraft and to lease another from the Russians. Three of the satellites will provide service to the AsiaPacific region where there is currently a shortage of transponders, though this gap will start to be filled with the launch of new satellites starting at the end of this year.

The new spacecraft ordered by Intelsat are three additional Intelsat 8 series, which will be provided by Martin Marietta Astro Space of the US. The cost of the new satellites was not announced. The Intelsat board of governors authorised the purchase of the satellites at its meeting in Washington in September.

The board also agreed to Intelsat leasing one Russian Express satellite. Intelsat has an option to lease three of these new-series satellites, the first of which is expected to be launched in the middle of next year. Intelsat is expected to take up the other options at later dates.

The additional Intelsat eight series spacecraft being ordered are Intelsat 803, 804 and 805. The 803 and 804 spacecraft will serve Intelsat clients in the Indian Ocean/AsiaPacific and eastern Atlantic Ocean regions. They will have the highest C-band power level of any Intelsat satellites.

According to Intelsat, each spacecraft will provide six global beam transponders, 12 "hemi" beam transponders, and 20 zone beam transponders. They will also have Ku-band spot beams that can be moved between high traffic areas as demand dictates.

The third satellite, a modified Intelsat 8-A, covering the Asian landmass, will feature expanded C-band and Ku-band coverages and other technical enhancements, according to Intelsat. The manoeuvrable Ku-band beams will cover all of China and Korea and most of Japan.

In addition to ordering the three

new satellites, Intelsat also has options for additional 8 and 8-A series satellites that must be exercised by March 1994. The first two Intelsat 8 series satellites were ordered last year and are scheduled to be launched in late 1995 and early 1996.

The Express satellite will be leased from the Russian Informcosmos organisation for five years, and is scheduled to begin operations in June 1994. The satellite, to be positioned at 85 degrees East, will serve the AsiaPacific region and has 10 C-band 36MHz transponders and 2 Ku-band 36MHz transponders.

The lease agreement will only become final, however, after the satisfactory completion of the coordination process over the 85 degrees slot.

Intelsat is also seeking assurances that the agreement between the US and Russia giving Russia access to the commercial market for launching satellites will not adversely affect Informcosmos' ability to perform its obligations under the lease.

Informcosmos was formed to design, manufacture, finance and own the Express satellites and will be responsible for the operations of the Intelsat/Express satellite.

Intelsat will be responsible for all customer service matters. The US entrepreneurial satellite company, Rimsat, also plans to lease Express satellites.

The four new satellites bring to 15 the number of spacecraft that Intelsat has on order. The first of these, Intelsat 701, which will serve the Pacific region, is to be launched this month. The remainder will be launched over the next three years.

Intelsat 701 will operate from 174 degrees East. This will require the Intelsat 501 satellite to be moved to a new position at 66 degrees East, from where it will serve the Indian Ocean region.

At its December meeting, the Intelsat board is expected to decide to redeploy Intelsat 505 from 66 degrees to 69 degrees at the end of 1994.

The coordination process for the use of this slot is already being undertaken. The new location will be used to expand Intelsat's capacity in AsiaPacific.

"These decisions will enable us to accomplish our number one business goal: providing cost-effective and reliable satellite capacity when and where our customers need it," said Intelsat director general and CEO, Irving Goldstein.



*‘The first
Russian Express
satellite will
provide coverage
of Asia Pacific’*

Satelindo Gears Up for The Next Generation of Satellites, "Hot Bird" Palapa-C



'Integrated telecommunications and onestop shopping services with efficient and effective price performance'

The Asia-Pacific region, with its expanding economy, holds great promise in the satellite industry. Indonesia, through its Palapa Domestic Satellite Communication System project, has been a pathfinder in the region for 20 years. P.T. Satellite Palapa Indonesia, or Satelindo, formed to manage the Palapa system, is committed to joining the ranks of top-flight companies providing integrated telecommunication services that are both reliable and affordable. Satelindo, a joint venture company between Indonesia's state-owned companies and private sectors, announces a new generation of Palapa satellite designed to maximize power, flexibility, and coverage area, while offering efficient, effective price performance compared to other satellite systems.

Hughes Communication International Inc. (HCII), the manufacturer of Palapa C1 have reached an Agreement with Satelindo to launch 30 C Band and 4 Ku Band transponders on the Palapa C Satellite. The Satellite is due to be launched in late 1995 by Arianespace's Launching Vehicle from French.

Beside Palapa C1 and C2 Satellite, Satelindo will also offer services in Cellular and International Telecommunication. "It will be in line with Satelindo Philosophy, which is to offer integrated telecommunication services, and function as one stop-shopping for our customers" said Iwa Sewaka, the President Director of Satelindo.

In November of this year, users of satellite systems will have a unique opportunity to see firsthand the benefits of using the Palapa system during a three-day conference to be held in one of the world's most exotic tropical settings, Bali. The conference highlight will be the gathering and two-way communication between Palapa users and serious potential users with Satelindo. These personal meetings will introduce Palapa-C's many benefits to potential customers. Other conference activities will give participants an opportunity to discuss such topics as the optimum use of satellites and the use of the new technology digital compressed video. Conference materials will include a detailed listing of the comparative

advantages of using Palapa-C.

The conference will be held at the new world-class Bali



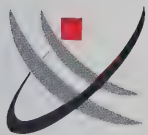
Iwa Sewaka
Satelindo's President Director

Cliff Resort, among the newest of Bali's growing number of hotels with facilities that easily accommodate international conferences. The secluded resort, located near the edge of a spectacular cliff 75 meters above the ocean, offers commanding views of Bali's famous sunrises and sunsets. Conference-goers will be able to take advantage of Bali's many attractions, such as the famed Hindu temple Tanah Lot, the volcanic Mount Kintamani and Gunung Agung, the artists' colony of Ubud, and, of course, its famed rice terraces.

Palapa-C, The Next Generation

Palapa-C, the next generation of Palapa satellites, is an ambitious technological development, expanding coverage to include the entire Asia-Pacific region and beyond, almost doubling prior transponder capacity and allowing a much wider array of international links, networks, and services. Expected coverage will reach Cambodia, Papua New Guinea, Vietnam, Hong Kong, Macau, Australia, New Zealand, India, Japan, and Korea.

The Palapa satellite system has been in existence since 1976, when the first satellite was launched. The oldest satellite system in the region, Palapa originally served a national purpose, linking Indonesia's diverse cultures. Palapa A-1, with a lifetime of seven years, covered only the territory of Indonesia. The second generation, the Palapa B series, was inaugurated with a 1983 launch, carrying twice the transponder capacity of its predecessor, covering the entire ASEAN region. Subsequent launchings of the



SATELINDO

Palapa B have given Indonesia the distinction of being the only developing country operating three satellites simultaneously.

To appreciate Palapa-C's competitive advantages, consider

the following:

- **Broad coverage :** The new range of coverage will place the Pacific Rim at its center and expand westward to Iran and Vladivostok, and south to Sydney and New Zealand.
- **Powerful signal:** The coverage area of these networks will deliver a first contour of 37 dBW at the C-Band and 50 dBW at the Ku-Band, thus providing the signal strength necessary to provide users with efficient use of smaller, less costly services.
- **Flexibility:** Palapa-C has two C-Band coverage areas, with 12 fully switchable transponders capable of providing dual beam downlinking. This ability means the Palapa Satellite networks can provide a complete Pacific path in the frequency that meets the customer's network requirements.

In addition, total transponder range for Palapa-C expands from 24 to 34, and the operational lifetime increases from eight years to a nominal span of 14 years.

Clearly, the more powerful Palapa-C will decrease the throughput overall transmission cost, allowing the customer the opportunity to utilize a less costly earth station, while simultaneously extending communication to more remote, less developed areas.

"For the coming gathering in Bali, Palapa Video Users Meeting, we will use the meeting as our gathering with Palapa Customers and Potential Customers, to discuss important trend and technology in the area of Video Broadcasting", said Adi Rahman Adiwoso,

'Palapa-C provides complete Pacific path in the frequency'

Satelindo's Marketing Director.

Now that the region has seen the arrival of new satellites



Coverage area of Palapa-C

such as Asiasat, Thaicom, APT, MEAsat, etc., Satelindo, which, with its Palapa background, has the most extensive experience in the satellite industry, welcomes the competition and is confident of providing the best, most cost-effective service for the widest audience.

For further information about the Palapa Video User Meeting, please call Shanti or Deddy from Satelindo at 62-21-5229322, or fax number 62-21-5229320



Uncertainty Over Fate of China Launches

Waiting for Washington

When the US administration of President Bill Clinton slapped technology export sanctions on China for selling missile parts to Pakistan, it announced that US companies stood to lose about US\$500 million in business. What it did not specify was the fact that if the sanctions are strictly maintained for the specified two years, non-Chinese companies in AsiaPacific also are in danger of catching a bad cold.

If full imposition of the sanctions is maintained, the most severe impact will be on China's commercial launch services and the satellite operators that have booked launches on Long March rockets for their spacecraft. However, the US State Department specified when announcing sanctions, that US-built satellites which already had "existing licences" would not be effected.

On this basis, the Apstar 1 satellite of the APT Satellite Co. of Hong Kong that is due to be launched for around US\$40 million by a Long March 3 mid-1994 appears to be in the clear. APT executives have been telling recent visitors that the licence for Apstar 1, which is being supplied by Hughes of the US, has already been issued and that the launch will go ahead. Reports from the US also indicate that this is the case, though no official confirmation was available from APT at press time.

The likelihood that Apstar 1 will be launched as planned is good news for an alliance of TV broadcasters who will use the satellite to transmit programming in competition to regional broadcaster Star TV. The alliance has booked 9 transponders (see news section) and includes HBO, CNNI, a Turner International entertainment channel, Discovery and ESPN of the US, and TVBI of Hong Kong. Reuters TV is also to distribute its news service to regional clients on the satellite.

A second satellite that is also apparently not effected by the sanctions is the Intelsat 7A satellite of the international satellite cooperative Intelsat. This

is due to be launched in the first half of 1994 on a Long March 3B for a fee of around US\$60 million.

Question marks, however, hang over the launches of two other important satellites. These

are AsiaSat 2 of the Asia Satellite Telecommunications Co. (AsiaSat) of Hong Kong and Optus B3, an Australian domestic satellite for telecom carrier Optus Communications.

The Optus B3 satellite is a replacement for the Optus B2 which was lost in an explosion during its launch aboard a Long March 2E rocket in December last year. Despite a seven-month investigation, neither Hughes, the provider of the HS601 spacecraft, nor the Chinese were able to determine what caused the loss of the satellite.

Hughes contract with Optus is to provide the satellite and deliver it to geostationary orbit in an operating condition. Hughes has promised to make certain improvements to the HS601 satellite prior to a new launch, and the China has promised to improve the launcher. At the time sanctions were imposed the new launch contract had not been signed.

At press time, a spokesman for Optus said that Hughes was negotiating with the State Department for the necessary clearance for the launch to go ahead. He declined to speculate on alternative launch plans if the US refused to clear the satellite for a launch by China.

AsiaSat's launch contract was signed well before the imposition of sanctions. The AsiaSat 2 satellite is being supplied by Martin Marietta Astro Space and is due to be launched at the end of 1994 or early in 1995 on a Long March 2E. At press time, AsiaSat was uncertain whether its launch would be affected by the sanctions and was awaiting clarification.

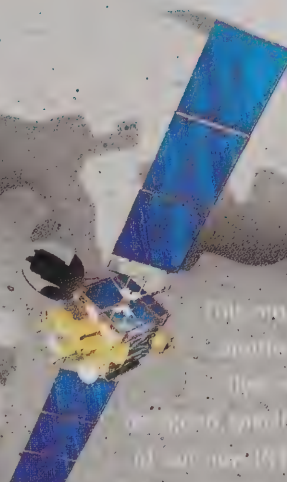
Both companies can argue that satellite launches, which are service contracts, should not be affected by the sanctions as no technology transfer is involved.

'The situation over the AsiaSat and Optus satellites was unclear'

**ASIAPACIFIC
SPACE
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'Some launches are expected to go ahead'

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INTELSAT satellite, coverage, and launching schedule

INTELSAT 701
Pacific Ocean Region
October 1993

INTELSAT 702
Atlantic Ocean Region
February 1994

INTELSAT 703
Pacific Ocean Region
August 1994

INTELSAT 704
Indian Ocean Region
October 1994

INTELSAT 705
Atlantic Ocean Region
March 1995

INTELSAT 706
Atlantic Ocean Region
January 1995

INTELSAT 707
Atlantic Ocean Region
May 1995

INTELSAT 708
Indian Ocean Region
October 1995

INTELSAT 709
Atlantic Ocean Region
November 1995

INTELSAT 801
Pacific Ocean Region
November 1995

INTELSAT 802
Pacific Ocean Region
February 1996

INTELSAT 803, 804, and 805 not shown

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Project Offers Cheap Inmarsat Deal

Mobile Opportunity

Telecommunications companies in Asia and elsewhere interested in marketing Inmarsat satellite mobile communications services in their countries will now be able to do so without going to the expense of building their own Inmarsat land earth stations. Instead, in 1994 they will be able to join a new project that will allow them to use new Inmarsat earth stations being built in Hong Kong and in Canada.

The new Project Condominium concept to expand the use of Inmarsat services has been developed by Hongkong Telecom, Cable and Wireless of Britain, IDB Mobile Communications of the US, Teleglobe Canada, and Morsviazspudnik of Russia.

Inmarsat is an international commercial cooperative that maintains a global satellite network used for mobile communications services at sea, on land and in the air.

Until now, only the operators of Inmarsat land earth stations have been able to offer a range of mobile services to customers. By making use of the new earth stations being built at Cape D'Aguilar in Hong Kong and Laurentides in Canada, telecommunications companies in countries without these facilities will for the first time be able to market Inmarsat B and M services.

The Cape D'Aguilar earth station, run by Hongkong Telecom, will serve the Pacific and Indian Ocean regions. It is scheduled to begin operations early next year and will provide Condominium services starting

next June.

The Laurentides station, which enters service in late 1994, will cover the Atlantic East and Atlantic West Ocean regions. The two earth stations will be linked by dedicated circuits that will enable customers to access any of the four ocean regions from one point.

"The full range of voice, fax and data communication and marketing capabilities, previously available only to land earth station operators, will also be accessible to other carriers at less than one tenth the costs for them to build their own facilities," says Hongkong Telecom deputy chief executive, Peter Howell-Davies.

In AsiaPacific, telecom companies in countries such as Japan, Australia, Hong Kong, China and Singapore operate their own Inmarsat earth stations, but there are many countries where this is not the case. It is telecom companies in these countries, such as the Philippines, that Hongkong Telecom hopes will make use of the new earth station facilities in the territory.

By doing so, many more telecom companies will be able to offer Inmarsat B and M services for the first time without having to bear the full cost of an earth station, and earn revenue in the process. Once these businesses have been developed the cost of building a separate earth station may be justified.

Inmarsat B, a new service offering voice, telex and high-speed data communications, is being introduced as a replacement for the Inmarsat A analog service which has served the maritime and land mobile industries for more than a decade. It will be available at a cost substantially lower than Inmarsat A.

Inmarsat M is a new mobile service offering voice, fax and data communications to the land and maritime markets, through the use of relatively cheap, lightweight terminals.

These can be used on motor vehicles, yachts and fishing vessels, all new markets with considerable development potential.

‘Many more countries will be able to market mobile services’



MOBILE SATELLITE

Communications in Asia Conference

6 & 7 December 1993, The Conrad Hotel, Hong Kong

DAY ONE

- 8.30 Registration and coffee
- 9.00 **OPENING REMARKS FROM THE CHAIR, Peter Jackson**, Chief Executive Officer, AsiaSat, Hong Kong
INTERNATIONAL MARKET PLANS AND EXPECTATIONS FOR SATELLITE MOBILE COMMUNICATIONS
- 9.10 **THE GLOBALISATION OF COMMUNICATIONS: DIRECTION, OPPORTUNITIES AND FUTURE FOR MOBILE SATELLITE COMMUNICATIONS**
Olof Lundberg, Director General, Inmarsat, UK
- 10.00 **HOW SATELLITE COMMUNICATIONS WILL MEET THE MOBILITY NEED OF A GROWING ASIA - PACIFIC REGION**
Fredrick I Judge, Senior Vice President and Chief Operating Officer, Hughes Communications Inc, USA
- 10.45 Morning coffee
- 11.00 **INTERNATIONAL SATELLITE DEVELOPMENTS: IMPLICATIONS FOR THE ASIAN MARKET**
Bruce Crockett, President and CEO, Comsat Corporation, USA
- 11.45 **NATIONAL AND PROVISIONAL PLANNING STRATEGIES FOR SATELLITE MOBILE COMMUNICATIONS**
Ming Louie, Director of Engineering, Globalstar, Loral Qualcomm Satellite Service Inc, USA
- 12.30 Lunch
- REGULATION AND POLICY SYMPOSIUM**
- 1.15 **REGULATING THE DOMESTIC AND INTERNATIONAL MOBILE**
Paper 1:
Ministerialrat Michael Heringer, Head of Section, Regulation of Satellite Communication, Federal Ministry of Posts and Telecommunications, Germany
- Paper 2:**
Satellite Representative, Directorate for Regulatory Affairs, Ministère de L'Industrie, des Postes et Télécommunications et du Commerce Extérieur, France

- 2.15 **REGULATORY DIRECTION AND POLICY FOR REGIONAL SATELLITE COMMUNICATIONS SERVICES**
INDONESIA:
Setyanto P Santosa, President, PT Telekomunikasi Indonesia
- HONG KONG:**
K S Wong, Assistant Director of Telecommunications, OFTA
- THAILAND:**
Pipope Chooncharoen, Chief of Research & Development, Ministry of Transport and Communications, Thailand
- MALAYSIA:**
Executive, Jabatan Telekom Malaysia
- PEOPLE'S REPUBLIC OF CHINA:**
Lee Yong Tuck, Executive Vice President & Chief Business Development Officer, Champion Technology Holdings Ltd, PRC
- 3.45 Afternoon tea
- 4.00 **SPECTRUM PLANNING AND MANAGEMENT OF SATELLITE SERVICES IN A DEREGULATED ENVIRONMENT**
Kavouss Arasteh, Head of Space Notification and Plan Division, Head, Radiocommunication Bureau, ITU, Geneva
- M H Au**, Assistant Director, Operations, OFTA, Hong Kong
- 4.45 **FREQUENCY CO-ORDINATION - WHAT ARE THE SOLUTIONS?**
Kavouss Arasteh, ITU
- M H Au**, OFTA
- Mike Gertler**, Consultant, Denton Hall Burgin & Warrens, Hong Kong
- Stewart White**, Partner, Denton Hall Burgin & Warrens, London
- 5.15 **STANDARDS FOR OPERATING AND EQUIPMENT ESSENTIAL PLANNING AND COORDINATION ISSUES**
Professor G Stette, Chairman ETSI TC-SES, European Telecommunications Standards Institute, France
- John Harris**, Assistant Manager Mobile Standards, Austel, Australia
- 6.00 End of Day One

DAY TWO

- 8.50 **OPENING REMARKS FROM THE CHAIR, Francis Choi**, Regional Director, East Asia, Inmarsat
- SATELLITE SYSTEMS: THE NEW WORLD ORDER**
- 9.00 **KEYNOTE ADDRESS: THE EVOLUTION OF MOBILE SATELLITE COMMUNICATIONS IN THE ASIA PACIFIC REGION**
Safwan Natanagara, Executive Vice President, PT INDOSAT
- 9.50 **KEYNOTE ADDRESSES: REGIONAL SATELLITE DEVELOPMENTS: IMPACT ON THE PROVISION OF MOBILE COMMUNICATIONS IN ASIA**
Paper 1: MOBILESAT
Dr Michael Wagg, Manager, MOBILESAT, Optus Communications, Australia
- Paper 2: Palapa-C**
Silalaha Sahala, Director, Satellites, Satelindo, Indonesia
- Paper 3: GloboStar**
Tim Brewer, General Manager, GloboStar, (Global Information Systems, Russia)
- Paper 4: JCSAT Executive**, Japan Satellite Systems Inc, Japan
- 11.10 Morning coffee
- 11.30 **TECHNICAL TRENDS IN MOBILE SATELLITES: OPPORTUNITIES AND BENEFITS TO THE MARKET**
Bruce R Elbert, Director, International Systems Development, Hughes Communications Inc., USA
- EMERGING MARKETS AND APPLICATIONS FOR SATELLITE MOBILE COMMUNICATIONS IN ASIA**
- 12.15 Lunch
- 1.30 **ANALYSING THE SERVICES AND PRODUCTS BEING DEVELOPED AND ALREADY ON OFFER FOR THE NEW MOBILE SATELLITE SERVICE**
Tadao Furukawa, General Manager, Strategic Planning, Radio Operations Unit, NEC Corporation, Japan

- 2.10 **PERSONAL COMMUNICATIONS SATELLITE SYSTEMS: THE EVOLUTION OF THE HANDHELD SATELLITE PHONE**
Paper 1: Inmarsat
Victor Barendse, Project 21 Commercial and Market Team Leader, Inmarsat
- Paper 2:** Odyssey
Len J Speltz, Odyssey Program Development Manager, TRW Space & Electronic Group, USA
- 3.10 Afternoon tea
- 3.30 **SATELLITES AND THEIR INTEGRATION IN PSTN'S**
Jean B Lagarde, Director for Strategy, Alcatel Espace, France
- 4.00 **GLOBAL MOBILE DATA: NEW TECHNOLOGICAL INITIATIVES AND ITS BENEFITS ON YOUR BUSINESS**
J Cato Halsaa, Senior Vice President, Satcom Division, ABB Nera AS, Norway
- 4.30 **LAND MOBILE SATELLITE SERVICES: APPLICATIONS AND FUTURE IN THE ASIA - PACIFIC REGION**
Paper 1: Don Koulaouzou, Marketing Manager, Mobile Satellite Services, Telstra Corporation Ltd, Australia
- Paper 2: Dr Edward Slack**, Director International Land Mobile Development, Comsat Mobile Communications, USA
- 5.15 **SATELLITE AND CELLULAR: MAXIMISING THE BENEFITS**
Dr Chris G Wildey, New Systems Technologies, Nokia Mobile Phones, UK
- 6.00 **PANEL DISCUSSION: REWARDS, RISKS AND BUSINESS OPPORTUNITIES FOR SATELLITE MOBILE COMMUNICATIONS IN THE ASIAN REGION**
Speakers from Day Two
- 6.20 Close of Conference

MOBILE SATELLITE COMMUNICATIONS IN ASIA CONFERENCE

6 & 7 December, 1993, The Conrad Hotel, Hong Kong

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Star Making 10 Movies

Media Assets, the programme development arm of Star TV, has started production of 10 low-budget Chinese-language films which will be shown in cinemas and later broadcast on the company's satellite TV movie channels, according to company executives. In addition to organising the production of these movies, the company says that it is planning co-production deals with major production companies.

Star TV, now 63.6 percent owned by Rupert Murdoch's News Corp., needs Chinese and other Asian-

language programming for its planned pay-TV channels and its existing free-to-air channels. At press time, it had announced no agreements giving it access to the libraries of existing producers of Chinese and other Asian-language programmes which analysts believe will be essential for the success of the venture. Murdoch, however, has access to a wealth of English-language movies and other programming.

The Chinese-language films being produced by Media Assets have low budgets that range between HK\$2-4 million

(US\$256,000-US\$512,000). The films will be in Cantonese, the dialect of Hong Kong and parts of southern China and are intended initially for theatrical release.

The first production, according to the company, will be called "The Story of Doug" and concern the exploits of a male gigolo. It is expected to be released by the end of the year.

Meanwhile, Star is involved in a court action with ATV, the Hong Kong terrestrial broadcaster, over an agreement under which Star is broadcasting ATV's Chinese-language programming.

Chinese Channel Starts

A joint venture company, majority owned by TVB International of Hong Kong, has started transmitting a Mandarin-language general entertainment channel via Indonesia's Palapa B2P satellite. The United Arts Co. says it has signed an agreement with more than 50 operators of cable television systems in Taiwan which will carry the channel for 15 hours a day.

Under the agreement, the TVBS channel will reach an initial audience of 1.2 million cable TV households, or the vast majority of the estimated 1.8 million households in Taiwan that are wired for cable. The joint venture has been made possible by recent government legislation legalising and regulating the cable industry and providing copyright protection for programme providers.

The three companies named as

being involved in the joint venture are TVB International, a subsidiary of Television Broadcasts (TVB), the Hong Kong terrestrial broadcaster and top producer of Chinese language programmes; Era International, a leading Taiwan video distribution company; and Fu Long Production, a Taiwanese TV programme production group.

United Arts Co. was established in mid 1993, and using a budget of US\$40 million, began production of Mandarin programming for the new channel mid-July. The company is also responsible for booking advertising in Taiwan, which together with advertising from elsewhere, will account for most of the channel's revenues.

The daily 15-hour service runs from noon Taiwan time to 3.0am in five-hour blocks of programming that are repeated twice. Prime time runs from 7.30pm to 1.30pm. Programming includes drama series and other TVB programmes which are dubbed in Mandarin; Taiwan-produced programmes that are provided by the new joint venture and other companies; and non-drama TVB programmes that are repackaged to suit Taiwan viewers' specific interests.

The TVBS channel will also ►



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air twice daily a new 30-minute news programme in Mandarin produced by TVB News. A 25-person news unit has been established in Hong Kong, and correspondents from Hong Kong, Los Angeles and other unspecified AsiaPacific countries will contribute to the

bulletins.

TVB is acting as the transmission agent for the TVBS channel and will manage the master control facility based in Hong Kong. It will be uplinked to Palapa B2P, using the facilities of Hongkong Telecom. The channel is encrypted.

Discovery from December

The US-based Discovery Channel documentary network will make its Asian regional debut on Indonesia's Palapa B2P satellite from 1 December. The launch of the channel will also mark the first time that digital compression techniques have been used in the region to transmit programming on a regular basis, according to the company.

Discovery, along with HBO Asia, Turner Broadcasting, ESPN Asia, ABC of Australia and TVB of Hong Kong, has also signed an agreement with the APT Satellite Company of Hong Kong for transponder space on the company's first satellite, Apstar 1, that is due for launch mid-1994. It will take one transponder.

Charles Humbard, Discovery's director of international programming operations, explained: "We will be using digital compression on Palapa B2P so that we can launch in two formats, NTSC and PAL. It will also allow us to improve our signal from Palapa to Taiwan."

To begin with, at least, it is expected that Discovery will uplink its service from Singapore, which is also used as a transmission base by HBO Asia. Hong Kong was also

being considered, but appeared to be out of the running because of the time required for an uplinking licence to be issued. "We need to move fast, so for now it will probably be Singapore," said Humbard. "But that could change with time."

The Discovery Channel broadcast in Asia will consist initially of programmes from the US Discovery Channel, and from its sister, The Learning Channel.

To start with, the programmes will be broadcast in English, though the channel will feature Asian hosts to give it a regional look. —

Simon Twiston Davies

Wave of the future

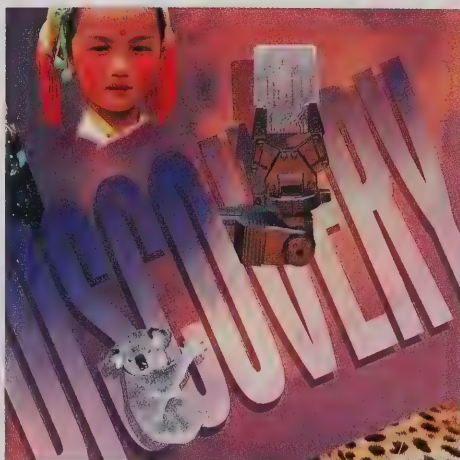
Three broadcasters in Indonesia and Malaysia have purchased scrambling systems to secure their satellite programming feeds against piracy. They are Rajawala Citra Televisi and Surya Citra Televisi of Indonesia and the TV-3 network of Malaysia.

All three broadcasters use Indonesia's Palapa satellite network to distribute their programming and will use the same scrambling systems. The VES-TP encoders and decoders have been provided by the video encryption and technology group of Macrovision of California in the US.

An increasing number of broadcasters in Asia are installing scrambling systems in their transmission operations to protect their locally produced programming and to gain access to international programming libraries and packages.

In many cases US and European programme suppliers and film studios require scrambling of satellite transmissions of their material to protect their business interests in other markets covered by a satellite's footprint.

The Macrovision encoders and decoders, according to the company, are priced significantly lower than competing products. This makes them affordable for small and medium-sized broadcasters in Asia and elsewhere.



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Asianet Forges Ahead

The Indian company Asianet, which has been broadcasting its first satellite TV channel in the state of Kerala for more than a month, is also working on establishing a cable network to serve the area. It has signed a contract with a Hong Kong-based company that will supply most of the equipment.

Asianet says it plans to develop the cable system to serve some 350,000 households in the coming year. This will almost certainly make it the largest system in India, and also the first to be built to international standards.

The system will allow Asianet to provide an initial 12 channels of programming to subscribers. Most of the equipment is being supplied by Pan Asian Systems. The same

company will also provide engineering services, including technical training for Asianet staff covering all aspects of engineering and construction of cable TV systems. The value of the contract was not disclosed.

The first Asianet channel, in the local Malayalam language, was inaugurated by K. Karunkaran, the chief minister of Kerala on 30 August.

The channel features a variety of original Malayalam programming that reflects the ethnic traditions and culture of Kerala, the first state in India to achieve 100 percent literacy.

The first channel is being broadcast via a Russian Ekran satellite that is stationed at 99 degrees East and operates in the L

band. Asianet has its own in-house production, broadcast and distribution facilities.

The full cable network will consist of hundreds of independently run cable systems serving different communities in Kerala. Each of the systems will receive programming from the satellite and feed it to local households.

The majority of programmes will be in Malayalam and another widely spoken Indian dialect, Tamil.

There will also be programmes broadcast in India's main language, Hindi, and in English.

The footprint of the Ekran satellite also covers the Gulf States, where many people from Kerala live and work. Asianet is planning to market its satellite TV services to this region as well.

Japan to Open Up

Self-imposed restrictions that have prevented full Japanese participation in the regional satellite and cable TV industries that are fast emerging in AsiaPacific are about to come to an end. At present, Japanese companies can only broadcast via Japanese satellites on a domestic basis and regional broadcasters uplinking outside Japan are not allowed to market their services in Japan.

This situation should end in the middle of next year when the Japanese parliament will almost certainly pass new legislation removing the current restrictions. This will open up the Japanese market to regional broadcasters

such as Star TV, and allow Japanese organisations to enter the regional market, should they wish to do so.

State broadcaster NHK, which has some 5 million fee-paying viewers for its satellite TV services — and probably 3 million more who manage not to pay — is already eyeing the regional opportunities. Senior executives say they would like to create a regional satellite TV service featuring NHK programming.

Exactly how this will be achieved is not yet clear, and NHK does not expect to have its regional service operating for three years. Executives, however, say that the service will almost certainly have to be dubbed into non-Japanese

languages if it is to reach a broad selection of regional viewers.

As a first step, NHK is looking at satellites it may use to transmit its service. NHK has been talking with the APT Satellite Co. of Hong Kong, whose first C-band satellite Apstar 1 is due to be launched mid-1994, and which will be followed by a second more powerful satellite, Apstar 2.

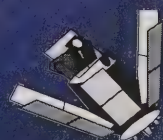
The Japanese state broadcaster is also interested in the Palapa C spacecraft of the new Indonesian satellite company, Satelindo.

The first of these satellites, with 30 C-band and 4 Ku-band transponders, is to be launched by the European company Arianespace mid-1995.

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Asian Satel

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Name of the Satellite / Location (in East Longitude)

Name of TV Station	Frequency/ (GHz)	Polarity/Sound	Frequency/Note (MHz)	
INTELSAT 503 183 DEGREES (INCLINED)				
TV Tokyo	10.975	V	5.8/6.8	
Nihon TV Network	11.015	V	5.8/6.8	Also feeds NBC News Channel
TV Asahi	11.510	V	6.8	CNN Domestic, Encrypted

INTELSAT 508 180 DEGREES (INCLINED)

ESPN International	3.725	RHCP		B-MAC Encrypted
Network Ten Australia	3.765	RHCP	6.6	
K2 Skylink	3.840	LHCP	6.65	Occasional Video
CNN International	3.845	RHCP	6.65	
			6.3	CNN Headline News Audio
Channel 7, Australia	3.876	RHCP	5.58	Vidiplex, NBC/CNBC
ABC, Australia	3.894	RHCP	5.75/6.6	Vidiplex, CNBC/CNN/BBC etc.
Channel 9, Australia	3.930	RHCP	6.65	Vidiplex, ABC/CBS
WORLD NET/C-SPAN	3.975	RHCP	6.65	PAL System
			7.0	VOA English and Spanish
			7.2	VOA French and Spanish
			7.35	VOA Vietnamese, Tibetan etc.
			7.45	VOA Laos, Korea etc.
			7.53	VOA Chinese
			7.6	VOA English
Matche Welle TV	3.975	RHCP	6.65	21:00-23:00 UTC, PAL System
NHK	4.015	RHCP	6.67/5	Also feeds ABC
RFO Tahiti	4.045	RHCP	6.65	For Tahiti, SECAM System
Nine Net	4.055	RHCP	6.65	Australia, PAL System
Occasional Video	4.166	RHCP		
Occasional Video	4.187	RHCP	6.65	WTN Pacific Feed, etc.
Tokyo Brodc. System	11.480	H	5.8/6.8	
Fuji TV	11.510	H	5.8/6.8	Also feeds ABC

INTELSAT 511 177 DEGREES

AFRTS	4.135	RHCP		B-MAC Encrypted
			7.4	AFRTS Radio
Occasional Video	4.166	RCHP	6.6	Fuji TV, etc.
Occasional Video	4.187	RCHP	6.65	TTV Taiwan, etc.

INTELSAT 510 174 DEGREES

Occasional Video	4.166	RHCP	6.65	
Occasional Video	4.187	RCHP	6.6	CCTV to NHK, etc.

SUPERBIRD-B 162 DEGREES

TV TEPCO	12.290	V	PCM	Tokyo Electric Power Co. Ltd.
Funky Banana Channel	12.370	V	PCM	Mon., Wed., Fri., only
Universal One TV	12.390	H	PCM	For Moonies, 2nd, 4th Sun. only
Life Design Channel	12.410	V	PCM	SKYPORT Encrypted
Satellite Channel	12.450	V	PCM	SKYPORT Encrypted
Nihon TV Cable Network	12.490	V	PCM	SKYPORT Encrypted
Space Vision Network	12.530	V	PCM	SKYPORT Encrypted
Cable Soft Network	12.570	V	PCM	SKYPORT Encrypted
Super Channel	12.610	V	PCM	SKYPORT Encrypted
Weather Channel			PCM	Independent Sound Track
Japan Cable TV	12.650	V	PCM	Relay CNN, SKYPORT Encrypted
Music Channel	12.690	V	PCM	MTV Japan, SKYPORT Encrypted
Star Channel	12.730	V	PCM	SKYPORT Encrypted

SUPERBIRD-A 158 DEGREES

Tokyo Brodc. System	12.300	H	5.75/6.2	SNG
Tokyo Brodc. System	12.320	H	5.75/6.2	SNG
Nihon TV Network	12.340	H	5.75/6.2	SNG
Nihon TV Network	12.360	H	5.75/6.2	SNG
Fuji TV	12.380	H	5.8/6.2	SNG
Fuji TV	12.400	H	5.8/6.2	SNG
Superbird-A Color Bar	12.410	V	6.2	

JCSAT-2 154 DEGREES

Japan Leisure Channel	12.28325	V	PCM	
Japan Religious	12.28325	H	6.2/PCM	
Satellite Brodc. Co. Ltd.				
Cable TV Access Channel	12.28325	H	PCM	Saturday Only
Business News Network	12.29825	V	PCM	Thursday Only
Midnight Blue	12.29825	V		M-System Encrypted
Nikkei Satellite News	12.31325	H	PCM	
JCSAT-2 Color Bar	12.32825	V	PCM	
High-Tech Shower Int.	12.34325	H		M-System Encrypted
Satellite ABC	12.37325	H	PCM	
M Channel (JMTV)	12.40325	H		M-System Encrypted

Name of the Satellite / Location (in East Longitude)

Name of TV Station	Frequency/ (GHz)	Polarity/Sound	Frequency/Note (MHz)	
Rainbow Channel	12.40325	H		M-System Encrypted
Kids Channel	12.44825	V	PCM	
M-Channel (JMTV)	12.44825	V		M-System Encrypted
Satellite Culture Japan	12.49325	H	PCM	
Children's Channel	12.49325	H		B-MAC Encrypted
Space Shower TV	12.52325	H	PCM	Coatec Encrypted
Channel NECO	12.56825	V	6.2	
Japan Sports Channel	12.58325	H	PCM	Coatec Encrypted
*PCM Zipang	12.59825	V	PCM	Coatec Encrypted (Audio Only)
*Radio Sky	12.59825	V	PCM	Coatec Encrypted (Audio Only)
Satellite Theater	12.61325	H	PCM	Coatec Encrypted
*Music Bird	12.62825	V	PCM	Coatec Encrypted (Audio Only)
*Satellite Music	12.62825	V	PCM	Coatec Encrypted (Audio Only)

JCSAT-1 150 DEGREES

TV Asahi	12.28325	H	6.2	SNG
JCSAT-1 Color Bar	12.32825	V	6.2	
NHK	12.37325	H	PCM	SNG
NHK	12.40325	H	PCM	SNG
P-SAT	12.46325	H	PCM	TV Service for Post Offices

STATSIONAR-7 140 DEGREES (INCLINED)

ORBITA-1	3.675	RHCP	7.0	Ostankino TV, Secam System
			7.5	Radio Mayak
DUB'L-1	3.876	RCHP	7.5	TV Russia, Secam System
			7.0	Radio Russia
Occasional Video	3.876	RHCP	7.5	
SAKHA TV	11.526	RCHP	7.0	Closed down?

TONGSTAR-1 (GORIZONT 17) 134 DEGREES (INCLINED)

Sun TV	3.675	RHCP	6.6	From Sep 10, Tamil Service, PAL
Sun TV	3.675	RHCP	6.6	Spot Beam for India? PAL

PALAPA B4 118 DEGREES

BBTV (Ch.7)	3.810	V	6.6	Thailand, PAL System
EM-TV	3.890	V	6.2	Papua New Guinea, PAL System
Army TV (Ch.5)	3.980	V	6.6	Thailand, PAL System

CHINASAT-5 115.5 DEGREES (Formerly SPACENET-1)

CCTV-3	3.720	H	6.6	PAL System, from Aug 8
CCTV-2	3.803	H	6.6	PAL System, from July 16
Xizang (Tibet) TV Station	3.843	H	6.6	PAL System, from July 16
			7.1	Xizang Brodc. Station-Chinese
			7.6	Xizang Brodc. Station-Tibetan
Sizhuang TV Station-3	3.843	H	6.6	Evening Only, Lhasa Relay
CCTV-1	3.883	H	6.6	PAL System, from July 16
Test Transmission	3.960	H	6.6	From Sep 19, Relay CCTV-1, PAL
			7.5	Sizhuang Brodc. Station
Guangzhou TV Station	4.000	H	6.6	Test Signal, from Aug 8, PAL
Xinjiang TV Station	4.120	H	6.6	PAL System, from Aug 1

PALAPA B2P 113 DEGREES

RCTI	3.800	H	L6.6/R7.2	Indonesia, PAL System
TV-3	3.820	V	6.6	Malaysia, PAL System
ATVI	3.880	H	6.8	Australia, PAL System
			7.2	Radio Australia
CFI	3.860	V	6.6	France, PAL System
TV-1	3.900	V	6.8	Malaysia, PAL System
Occasional Video	3.920	H	6.8	For IBC Thailand, Encrypted
TBT Ch. 11	3.930	V	6.8	Thailand, PAL System
ABS-CBN	3.960	H		Philippines, B-MAC Encrypted
CNN International	3.980	V	6.8	PAL System
HBO Asia	4.000	H		B-MAC Encrypted
AN-TEVE	4.020	V	6.8	Indonesia, PAL System
GMA	4.030	H	6.8	Philippines
People's Network	4.050	H	6.8	Philippines
TPI	4.080	H	6.8	Indonesia, PAL System
ESPN International	4.100	V		B-MAC Encrypted
SCTV	4.120	H	6.6	Indonesia, PAL System
Nine Net	4.140	V	6.6/6.8	Australia

CHINASAT-2 110.5 DEGREES

China Educational TV-1	3.848	H	6.6	CETV-1, PAL System
China Educational TV-2	4.178	H	6.6	CETV-2, PAL System

lite TV List

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Name of the Satellite / Location (in East Longitude)

Name of TV Station	Frequency/ (GHz)	Polarity/ Sound (MHz)	Frequency/Note
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BS-3a 110 DEGREES

NHK BS 1st Program	11.84256	RHCP	PCM
NHK BS 2nd Program	11.91928	RHCP	PCM

BS-3b 110 DEGREES

Japan Satellite Broadc. Co. Ltd	11.80420	RHCP	PCM Coatec Encrypted
Sat. DAB Co. Ltd.			PCM Independent Sound Track
HDTV Test Transmission	11.88092	RCHP	PCM Muse System

PALAPA B2R 108 DEGREES

TVRI	4.000	H	6.8 Indonesia, PAL System
Occasional Video	4.120	H	6.8

ASIASAT-1 105.5 DEGREES

TV Mongol	3.760	H	6.6 Mongolia, Secam System
Star TV	3.800	H	L5.58/R5.76 Prime Sports
Star TV	3.840	H	L5.58/R5.76 MTV
			5.94/6.12 BBC-WS English
Star TV	3.860	V	L6.30/R6.48 Prime Sports, Southern Beam
Star TV	3.880	H	L5.58/R5.76 BBC WS Television
			5.94/6.12 Chinese Bilingual Sound
Star TV	3.900	V	L6.30/R6.48 MTV, Southern Beam
Star TV	3.920	H	L5.58/R5.76 Chinese Channel
			5.94/6.12 BBC-WS Chinese etc.
Star TV	3.940	V	L6.30/R6.48 BBC, Southern Beam
Star TV	3.960	H	L5.58/R5.76 Star Plus
			5.94/6.12 BBC-WS Arabic etc.
ZEE TV	3.980	V	6.3/6.48 PAL System
Star TV	4.020	V	L6.30/R6.48 Star Plus, Southern Beam
Yunnan TV Station-1	4.040	H	6.6 Sun, Mon, Wed, Fri only
			7.5 Yunnan Broadcasting Station
Guizhou TV Station-1	4.040	H	6.6 Tue, Thu, Sat only
			7.5 Guizhou Broadcasting Station
Star TV	4.060	V	L6.30/R6.48 Chinese Channel, Southern Beam
Pakistan TV	4.100	V	Southern Beam, PAL System
CCTV-4	4.120	H	6.2 For Chinese abroad, NTSC
Myanmar TV	4.140	V	6.6 Southern Beam

STATSIONAR-21 103 DEGREES (INCLINED)

DUB'L IV	3.675	RHCP	7.0 For Europe Russia
Asia TV Network-One	3.876	RHCP	7.5 English Service, PAL System
Asia TV Network-Gold	3.876	RHCP	7.5 Hindi Service, PAL System

STATSIONAR-14 96.5 DEGREES (INCLINED)

Orbita II	3.675	RHCP	7.0 Ostankino, SECAM System
			7.5 Radio Mayak
CCTV-4	3.825	RHCP	6.6 For Chinese abroad, PAL System
Azerbaijan Radio TV	3.876	RHCP	7.4 SECAM System

INSAT-2B 93.5 DEGREES

Doordarshan TV	3.823	V	5.5 Business and News Ch., PAL
Doordarshan TV	3.983	V	5.5 Entertainment Ch., PAL
Doordarshan TV	4.140	V	5.5 PAL System

Name of the Satellite / Location (in East Longitude)

Name of TV Station	Frequency/ (GHz)	Polarity/ Sound (MHz)	Frequency/Note
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STATSIONAR-6 90 DEGREES

DUB'L II	3.675	RHCP	7.0 TV Russia, SECAM System
			7.5 Radio Russia
Orbita II	3.876	RHCP	7.5 Ostankino, SECAM System
			7.0 Radio Mayak
DUB'L I	3.916	RHCP	7.5 Feeds to Far East
Orbita I	3.942	RHCP	7.0 Feeds to Far East

STATSIONAR-3 85 DEGREES

Muslim TV Ahmadiyya International	3.876	RHCP	6.5 Fri. only, main audio in Urdu
			7.0 Sub-audio in English
			7.2 Sub-audio in Arabic

INSAT-1D 82.9 DEGREES

Doordarshan TV	2.575	LHCP	5.5 PAL System
Doordarshan TV	2.615	LHCP	5.5 PAL System
Doordarshan TV	4.170	H	5.5 PAL System
Doordarshan TV	4.190	H	5.5 PAL System

STATSIONAR-13 80 DEGREES

DUB'L III	3.675	RHCP	7.0 TV Russia, SECAM System
Afganistan TV	3.876	RHCP	7.5 Closed down? SECAM System
THVN	3.876	RHCP	7.5 Vietnam, PAL System
			7.0 Voice of Vietnam
Intersputnik	3.876	RHCP	7.5 Occasional Video

INSAT-2A 74 DEGREES

Occasional Video	4.000	H	5.5/6.6 PAL System
Doordarshan TV	4.115	H	5.5 PAL System
Doordarshan TV	4.150	H	5.5 PAL System
Doordarshan TV	4.175	H	5.5 PAL System

INTELSAT 505 66 DEGREES (INCLINED)

CFI	3.980	RHCP	5.8 France, PAL System
World Net/C-Span	4.166	RHCP	6.6 PAL System
Deutchewelle TV	4.166	RHCP	6.6 PAL System

INTELSAT 604 63 DEGREES

NHK	3.885	LHCP	6.6 Feed to Japan
Occasional Video	4.166	RHCP	6.6
Occasional Video	4.187	RHCP	6.65

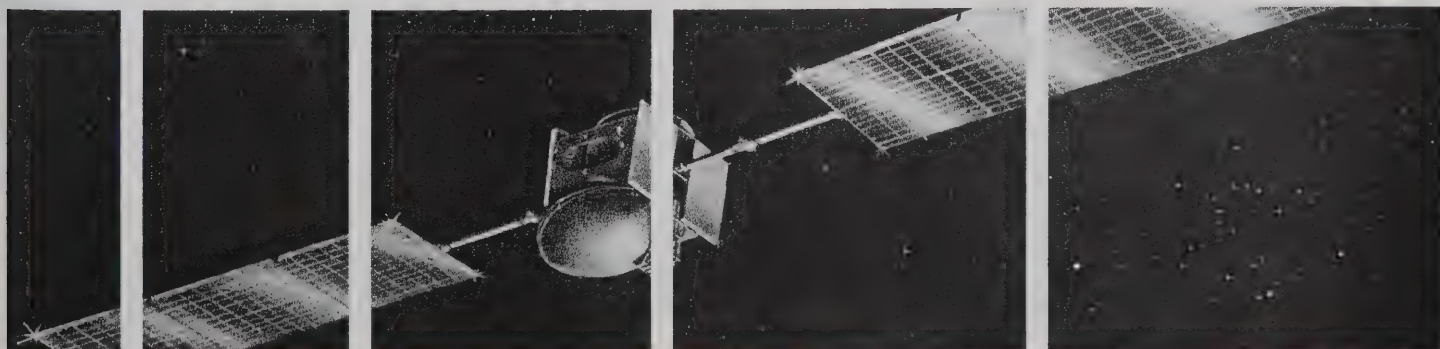
NETSAT 602 60 DEGREES

Occasional Video	4.187	RHCP	6.65
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INTELSAT 507 57 DEGREES (INCLINED)

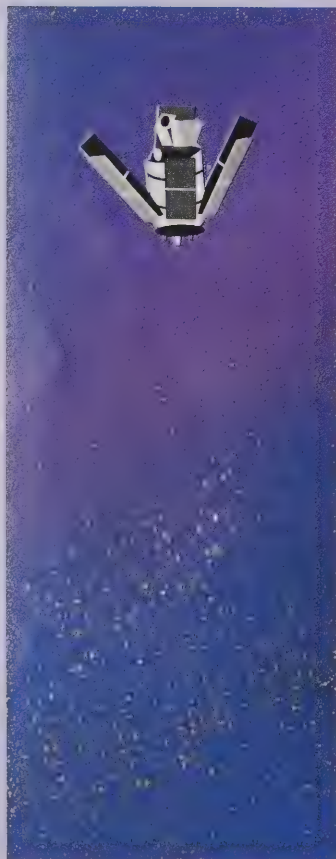
Bangkok Entertainment Co.	3.735	LHCP	6.8 Thailand, PAL System
Masscommunications Org.	3.770	LHCP	6.8 Thailand, PAL System
BBC World Service TV	3.900	LHCP	B-MAC Encrypted

Note: These data are based on actual monitoring in Japan. The frequencies are including tolerance within 5 Mhz. Color system which is not noted are NTSC. * PCM Music Broadcast Monitors are as follows: Hiroyuki Nagase - Yokohama, Masaji Komatsu - Okinawa, Hiroshi Nakamoto - Wakayama, Hidetoshi Takashima - Chiba.



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Intelsat Reorganisation

The global satellite cooperative Intelsat has created three new groups that will report to chief operating officer and executive vice president John Hampton. The three new groups are sales, operations, and corporate and market strategies.

A former chairman of the Intelsat board of governors, Len Dooley of Australia, will head the corporate and market strategies group, where he will oversee market research and forecasting, service planning and strategic planning.

Dooley has worked with the Australian telecom carrier Telstra for the past 28 years in a range of positions involved with cable and satellite services development. He served as chairman of the Intelsat board from June 1992 to June 1993 and has been a board member in various capacities since 1967.

Luiz Perrone from Brazil, formerly Intelsat's director of systems operations, is to direct the sales group, which comprises product sales, capacity allocation, operations plans and regional marketing. Operations is headed by Conny Kullman from Sweden. The group is responsible for all of the operational aspects of the satellite system, including administrative responsibility for the satellite control centre, the operations centre, intersystem coordination and orbital resources management.

Meanwhile, Francis Latapie from France, is to serve as director of international relations and will report to Intelsat director general and CEO, Irving Goldstein. His responsibilities will include public and external relations and various government relations assignments.

Saudi Network Upgrade

Scientific-Atlanta of the US has started shipping equipment to Saudi Arabia to be used in a US\$10 million upgrade to the nation's domestic satellite system. Working with the Ministry of Post, Telegraph and Telephone (MOPTT), the company will upgrade the network to establish it as the first Arabsat-based system to provide digital IDR services.

The new digital domestic satellite network will provide the MOPTT with an additional 330 voice channels. Features of the upgrade include a new 11-metre Earth station hub located in the capital of Riyadh, two new 5.5 metre transportable Earth stations, four retrofitted transportable units, and a network control centre that will enable operators to remotely operate and monitor the

transportable Earth stations anywhere in the country.

The goal of upgrading the system is to provide accessible telecommunications services throughout the country, even in the middle of the desert where permanent systems are not always in place.

New Head for ASO

Malcolm H. Farrow has been appointed executive director of the Australian Space Office (ASO). He replaces Bruce Middleton who served in the same post for six years during which he played a key role in establishing an indigenous space programme in Australia.

Farrow's appointment follows a major restructuring of Australia's Department of Industry, Technology and Regional Development, to which the ASO is attached. Until his appointment, Farrow was the first assistant secretary, construction and services industries division of the department.

He has held a number of positions in various government departments, including the Department of Trade, the Department of Minerals and Energy and the former Department of Industry Technology and Commerce since 1967.

Telelobe Office



Telelobe Canada, one of the world's leading intercontinental telecommunications companies, has established a presence in AsiaPacific by opening an office in Hong Kong. Christian Sarrazin has been appointed vice president and managing director of the office.

Sarrazin comes from the Canadian foreign service. He served in posts in the US, Hong Kong, Beijing and as Canada's consul general in Shanghai. Prior to his appointment with Telelobe in Hong Kong, he was CEO of the Canadian Commercial Corp., a government agency dedicated to international trade, including substantial business in AsiaPacific.

Leading Conference

The Asia-Pacific Cable and Satellite TV Summit will be held in Hong Kong from 29 November to 1 December at the Kowloon Shangri-La Hotel. It is the last major conference of the year and is attracting virtually all the leading players expected to participate in the major expansion of satellite and cable TV in the region.

AsiaPacific Space Report is the only official publication at the event. The December issue of Space Report will be distributed to all delegates at the conference. The issue will include a Special Supplement on Satellite and Cable TV and offers important advertising opportunities.

The first day of the conference will be devoted to AsiaPacific regional policy, planning and regulation. The opening remarks will be delivered by Hugh Leonard, secretary general of the Asia-Pacific Broadcasting Union. The impact of new technologies on the growth of regional satellite and cable TV will also be discussed, as will the regulatory framework governing the industry in China.

Because of the current confrontations over orbital slots serving AsiaPacific (see Satellite Communications Supplement), the highlight of the first day is likely to be the session devoted to regulation in orbit. As representatives from Tongasat, PanAmSat, Rimsat, AsiaSat, APT and other satellite companies are expected to be present there should be no lack of informed debate.

The first day will also cover the expanding satellite and cable TV markets and the

opportunities available in Thailand, Indonesia, Taiwan, and Australia, and the development of satellite communications in the Philippines.

The second day will provide participants with the latest information on the new satellites that will serve AsiaPacific, so making the growth of satellite and cable TV a reality. Presentations will cover AsiaSat 2, the Thaicom satellites, Intelsat's new regional satellites, PanAmSat's first Pacific satellite and the Russian satellites of Rimsat and Globostar.

Technology and options on the ground will look at the latest in DBS, SMATV, MMDS and TVRO, while the impact of digital video compression technology will also be featured.

The final day of the event will be devoted to the key aspect of programming. Topics to be covered include the Chinese programme market, the globalisation of sports television, programming for entertainment, and Asian news services.

To book for the event contact organiser IIR Hong Kong on Tel 852-594-5618 or Fax 852-547-3836. To book advertising in AsiaPacific Space Report contact Brian Jeffries, Phone 852-577-9331, Fax 852-890-7287.

First MobSat Event

After the expansion of satellite and cable TV in AsiaPacific, the next market of opportunity is likely to be that of mobile satellite communications. Plans are already being developed for the first global satellite handheld phone services and existing mobile satellite communications services are expanding in AsiaPacific, as elsewhere.

The first Mobile Satellite Communications in Asia Conference will be held in Hong Kong at the Conrad Hotel on 6 and 7 December. AsiaPacific Space Report is the official publication for the event and

all delegates will receive a copy of the December issue. The issue will also include an extended section on mobile satellite communications.

The conference, organised by AIC Conferences, will look at the international market plans and expectations for satellite mobile communications and their likely impact on Asia.

To book for the event contact AIC in Hong Kong at Phone 852-520-1481, Fax 852-866-7340. To book advertising in the December edition of AsiaPacific Space Report contact Brian Jeffries at Phone 852-577-9331, Fax 852-890-7287.

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Satellites Prove their Worth

Dear Readers,

I have been spending this month in the Philippines, so let me share some thoughts about the growth of satellite telecommunications here.

I have been a regular visitor to the Philippines for the last two and half years, and during this time I have seen a big jump in satellite transponder usage. In 1991 there were only the equivalent of two transponders used for domestic applications; today it is over six transponders and the carriers are now looking for more capacity. The growth has come in the telecommunications sector, rather than television, with four of the transponders in use for telecommunications traffic compared with only one in 1991.

Of course, the rapid growth in telecommunications is only to be expected. The Philippines missed the growth boom experienced by other Asean countries in the 1980s, and is now starting the process of improving the infrastructure and building up the nation. President Fidel Ramos has declared a national goal to make the Philippines another "tiger" by the year 2000.

Anybody who has lived in the Philippines knows how difficult it is to obtain a telephone line or make a domestic call. However, in all fairness to the Philippines, I must add that in my years in living in Indonesia or Thailand, it was just as difficult to obtain a telephone line.

As the Philippines is an archipelago of 7,107 islands, the use of satellites for telecommunications is a classical industry application. Unfortunately for the average customer, the growth has not been in the public switch networks, so the wait is just as long for a residential line. However, there has been a rapid growth in VSAT networks and business telecommunications is definitely improving.

The Philippines is one of Asia's most deregulated countries in telecommunications. Following the American pattern, all telecom companies are private and the government's role is that of the regulator — the National Telecommunications Commission (NTC) is the watchdog, somewhat similar to the FCC in the US. Since the Philippines was under US jurisdiction for most of the early part of the century, similarities are only to be expected. In fact, the major domestic telecom companies were subsidiaries of US companies, until during the Marcos' era when a law was passed to limit foreign ownership to 40 percent.

Some international carriers still use their

foreign partners to handle overseas switching — the Philippine Long Distance Telephone Co. with ATT; Philippine Global Communications with RCA; Eastern Telecommunications Philippines with Cable and Wireless, and until recently the Globe Mackay Radio Corp. with ITT. The latter have now become Globe Telecom with Singapore Telecom's acquisition of ITT's share.

There are around 40 other domestic carriers, including two large groups, the Philippine Telegraph and Telephone Co. and the Radio Corp. of Philippines (RCPI). In addition, there are two franchised satellite "carriers", the Philippine Communications Satellite Corp., the Intelsat signatory, and the Domestic Satellite Philippines Co. which used to have the exclusive domestic satellite franchise.



Since 1988, the NTC has allowed other carriers to access satellite, and has granted five companies VSAT licenses for both voice and data traffic: Liberty Broadcasting Network, International Communications Corp. (ICC), Clavecilla Radio (now absorbed by Globe Telecom), Capital Wireless — a subsidiary of PTT — and finally PLDT. It is these VSAT companies that are pushing the growth of satellite communications.

Although their customers are mainly corporate, they can carry voice traffic. ICC has recently acquired RCPI, so giving it access to a wide network of public calling offices that are now being serviced by satellite. Globe Telecom, with Singapore Telecom as its partner, is planning to move into rural telephone networks and will expand its VSAT networks. ICC also plans to go into rural telecommunications with its new partners Telstra of Australia and Brit-

ain's Cable and Wireless.

Even the goliath PLDT, after a slow start, is now starting up VSAT networks to supplement and expand its microwave trunks. PLDT has awarded a tender to Hughes Network Systems for six hundred VSAT terminal for expansion of rural telecoms.

There are two established cellular phone franchises, and many new franchises are in the process of setting-up, especially in the non-urban areas. Satellite links will play a big role in nationwide connectivity.

The television industry in Philippines is also in the private sector and there are five national networks on VHF with three new UHF channels licensed. ABS-CBN, leases one transponder for distribution to its affiliates. GMA and PTV share another transponder.

At the moment, all domestic satellite transponders used in the Philippines are from Palapa, which has covered the country with its regional Asean footprint since 1978. However, Indonesian dominance may be ending. Both the Apstar 1 and PAS-2 satellites scheduled for launch in 1994 will have C band footprints covering all of the Philippines, with power levels equal or greater than Palapa. AsiaSat-2 (scheduled for 1995) also includes the Philippines in its C-band footprint and Rimsat's projected series of Gorizonts and Express satellites (1994 and 1995) will provide good coverage.

These satellites will all be able to provide the Philippines with the necessary satellite capacity to expand its telecommunications network. In fact, the biggest challenge will not be technical, but overcoming regulatory difficulties and non-cooperative practices left over from former administrations.

The Department of Telecommunications and Transport thinks the Philippines will need at least 12 transponders by the year 2000. In fact, several groups have proposed to the department that it should support a Philippines' national satellite. However, the question is whether the Philippine government can afford its own satellite and in the case of the private sector telecommunication companies whether they could unite to finance their own satellite. —

Best Regards, Tim Brewer

Tim Brewer is well known in satellite circles in Asia, and is a consultant based in Hong Kong. He is currently assisting Global Information Systems, Russia's first private satellite company to set up an international satellite system.

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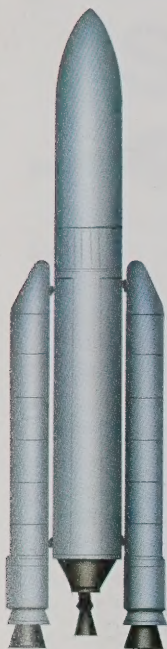
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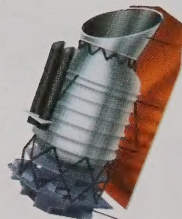
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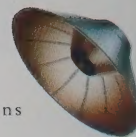
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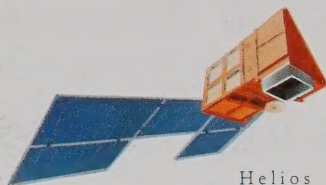
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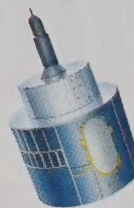
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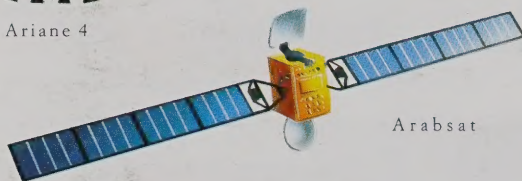
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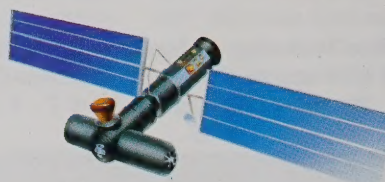
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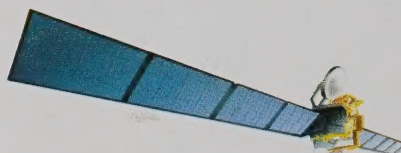
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